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AmerGen SM

An Exelon/British Energy Company

10 CFR 50.73

September 26, 2003
2130-03-20249

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Licensee Event Report 2003-003-00:
Actuation of Reactor Protection System due to Grid Transient

Enclosed is Licensee Event Report 2003-003, Revision 0. This event did not affect the health and safety of the public or plant personnel.

If any further information or assistance is needed, please contact Mr. William Stewart, of my staff, at 609.971.4775.

Very truly yours,

Ernest J Harkness P.E., Vice President
Oyster Creek Generating Station

EJH/RAM
Enclosure

cc: Regional Administrator, USNRC Region I
USNRC Senior Project Manager, Oyster Creek
USNRC Senior Resident Inspector, Oyster Creek
File No. 03081

IE22

NRC FORM 366 (1-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Actuation of Reactor Protection System due to Grid Transient

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
08	14	2003	2003	- 003 -	00	09	26	2003	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)			
POWER LEVEL (10)	100	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
		20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
		20.2203(a)(1)	50.36(c)(1)(i)(A)	X 50.73(a)(2)(iv)(A)	73.71(a)(4)
		20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
		20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	
		20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
		20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
		20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
		20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
William Stewart	609.971.4775

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 14, 2003, an electrical disturbance in the off-site electrical power grid caused an overexcitation condition in the main generator. This resulted in a main generator lockout, turbine trip, and reactor scram from 100% power. The reactor shut down as designed. Plant cooldown to cold shutdown was required due to the trip of all five recirculation pumps (three auto trip and two manual trip). Off-site power was available throughout the event.

The safety significance of this event is considered minimal. The plant responded as designed for this type of event. Technical Specification limits were maintained. There was no radioactive release. Off-site power was not lost. Operator response was appropriate.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

DATE OF DISCOVERY

This event occurred on August 14, 2003.

IDENTIFICATION OF OCCURRENCE

Note: System Identification codes from IEEE 805-1984 are indicated with SI. Component Function Identifiers from ANSI/IEEE 803A-1983 are indicated by CFI.

An electrical disturbance in the off-site electrical power grid (SI - FK) caused an overexcitation condition in the main generator (SI - TB, CFI - GEN & TG). In response to the overexcitation condition, protective relaying (CFI - 86) locked out the main generator which tripped the main turbine (SI - TA, CFI - TRB) and scrammed the reactor (SI - AC, CFI - RCT). Off-site power was not lost. Actuation of the Reactor Protection System is reportable under 10 CFR 50.73(a)(2)(iv)(A).

CONDITIONS PRIOR TO DISCOVERY

The plant was operating at approximately 100% power with all reactor plant pressures and temperatures normal for full power operation. All safety-related equipment was operable.

DESCRIPTION OF OCCURRENCE

On August 14, 2003, at 1610 hours, annunciators (CFI - ANN) in the Main Control Room indicated a voltage transient and Main Generator Overexcitation. The sequence of alarms (SI - IQ) shows that the initial condition was a low voltage and low VAR condition on the main generator. Within seconds, the low voltage alarm (CFI - EA) cleared and over-voltage and over excitation alarms (CFI - IA) were received. About nine seconds later protective relaying locked out the Main Generator which tripped the main turbine and resulted in a reactor scram.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

The turbine trip caused a pressure increase which caused one of five Electromatic Relief Valves (CFI - RV) to open momentarily, three of five Reactor Recirculation Pumps (SI - AD, CFI - P) to trip due to the pressure signal in the Anticipatory Trip Without Scram logic, and both Isolation Condensers (SI - BL) to actuate. The reactor scram shut down the reactor as designed. During scram follow-up actions, the locking feature of the Reactor Mode Switch prevented placing it in the Shutdown Position before reactor pressure decreased to 850 psig. As a result, the Main Steam Isolation Valves (MSIVs) (SI - SB, CFI - ISV) automatically shut. Operators manually tripped the two operating Reactor Recirculation pumps, as required by procedure due to the auto trip of three of the recirculation pumps, and stabilized plant conditions. Off-site power was available throughout the event.

Although no Technical Specification required the plant to be placed in the Cold Shutdown condition, the trip of all reactor recirculation pumps required cooldown to cold shutdown to recover the plant. Plant cooldown was begun at 1902 hours using the Isolation Condensers. Shutdown Cooling (SI - BO) was placed in service at 0030 hours on August 15, 2003 and the cold shutdown condition was reached at 0236 hours.

APPARENT CAUSE

Actuation of the Reactor Protection System was caused by closure of the turbine stop valves when the turbine tripped. The turbine trip was caused by the Main Generator Lockout, which was caused by protective relaying in response to an overexcitation condition on the main generator. The overexcitation condition was caused by a significant transient on the off-site power grid external to the station. Subsequently, it was recognized the transient on the power grid was related to a cascading blackout affecting a large part of the northeast United Sates and adjacent parts of Canada.

ANALYSIS OF OCCURRENCE AND SAFETY ASSESSMENT

The safety significance of this event is considered minimal. The plant is designed for this type of transient and responded as designed. Technical specification limits were maintained. There was no radioactive release, nor any effect on the health and safety of the public. Off-site power was available throughout the event. Operator response was appropriate.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

CORRECTIVE ACTIONS

Evaluated generator-related electrical components for damage from the transient and determined no repair was needed.

Investigated the problem with the reactor mode switch and determined the locking mechanism was operating properly and no repair was needed.

Training on Mode Switch operating technique will be provided to Operations personnel.

SIMILAR EVENTS

LER 1992-005, Reactor Scram & Engineered Safety Features Actuation caused by Offsite Fire

LER 1994-007, Reactor Scram due to Personnel Error while Performing Switchyard Work